Environmental Design Program

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Maryland Department of Natural Resources
C. Ronald Franks, Secretary
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Rain Gardens

What's a Rain Garden?

A rain garden is an attractive native plant garden with a purpose: to filter rainwater naturally to reduce stormwater pollution that is degrading our rivers, streams, and the Chesapeake Bay. Rain water (or snowfall) is routed to the garden and filtered naturally by the plants and soils in the garden. This filtration process removes nutrients and pollutants.

Rain gardens use a combination of soils and water-tolerant native plants that catch and hold above-average amounts of water, a concept known as bioretention. The soils and plants then naturally filter out pollutants found in rain and runoff.

Why is a Rain Garden Important?

Under the general practice of storm water management, rainwater is allowed to flow out into the street and storm sewers. Eventually it flows into our regional rivers and streams. These storm waters carry pollutants such as motor oil, pesticides, fertilizers and other harmful chemicals from our lawns and driveways that cause excessive weeds, turbid water, and sediment buildup. By creating a rain garden in your yard you can reduce stormwater runoff, help recharge ground water, and provide great wildlife habitat.

How to Build a Rain Garden

Where To Put Your Rain Garden

A rain garden can be placed almost anywhere, as long as it doesn't interfere with underground utilities. It will be most useful if it is positioned to collect runoff, in spots such as:

- Near a downspout
- In low wet area
- Near a driveway, road, or sidewalk (but watch out for snow and salt)
- At the base of a slope

Engineering the Garden

- Most home rain gardens are simply a depression in the ground. No fancy pipes. No special soil.
- A rain garden can be as shallow as 4" or 5" deep or it can be 1' - 2' or more.
- Almost any size garden is possible. Larger gardens of course will be able to absorb and hold more water.
- Rain gardens work in any kind of soil provided you select appropriate plants. In most yards it is not necessary to amend your soil.
- If your soil drains very slowly and you want to amend it, mix in weed-free compost. For most home rain gardens, layering rock and sand is not necessary and can sometimes create problems.
- If you want to get technical, you can design a garden to collect the water from a specific area. For example, you could create a garden with enough volume to hold the runoff from your roof during a 1" rainfall.

Photo courtesy of Low Impact Development Center

Choosing Your Plants

- Nature is your palette - trees, shrubs, flowers, ferns, grasses, sedges!
- Native plants are great for rain gardens. Why?
- They are easy on the environment because most require no fertilizing or watering.
- They create a no-fuss, low-maintenance garden.
- Many native plants have deep and extensive root systems that help loosen the soil so water can quickly infiltrate.

Go to www.fws.gov/r5cbfo/nursery.htm for a list of native plant nurseries.

Designing Your Own Garden

- It is great fun to design your own rain garden. The garden should have a wet zone and an upland zone (dry zone).
- Select water tolerant plants for the wet zone. Wetland plants do well here so choose plants native to sedge meadows, lakeshores, stream banks, wet prairies, and forest swamps. The upland zone can be planted with plants adapted to moderate and dry areas - prairies, savannas, woodlands.
- For best results in sunny gardens, plan for at least 25% - 50% grasses or sedges. In shady gardens at least 50% sedges and ferns is a good rule of thumb for the wet zone.
- Your garden will establish much more quickly if you use plants instead of seeds. Fluctuating water levels make it difficult to establish rain gardens with seed and seeded erosion blankets are sometimes necessary.

How to Build a Rain Garden

- Seedlings (often sold in 4-packs and 6-packs) are a great choice for rain gardens. If you can afford it, plant seedlings at one-foot intervals. 18" spacing is acceptable for seedlings but plants will take longer to fill in. Larger plants, of course, can be planted further apart.
- How many plants will you need? Say you have a 300 square foot garden and you figure the wet zone is about 100 square feet. If you plant with seedlings at one-foot intervals and decide on 50% grasses : 50% flowers, you will need:
  100 plants for wet zone (50 grass, 50 flowers)
  200 plants for upland zone (100 grass, 100 flowers)

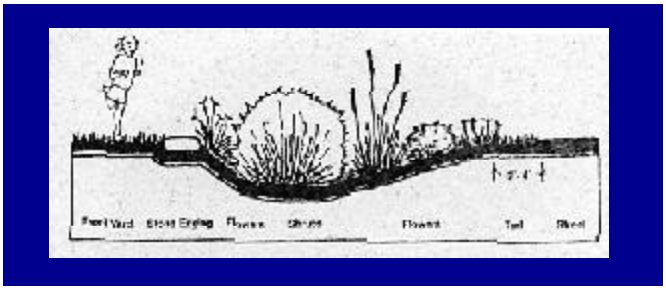
Design Tips

- For a low-maintenance garden, choose a naturalistic style rather than a formal style.
- Keep garden edges neat and tidy. Mowed borders, edging, and fences help instill a look of care to a naturalistic garden.
- Don't be afraid of grasses! Native grasses, with their extensive root system, are the workhorses of a rain garden. Aesthetically, grasses knit the garden into a pleasing composition, toning down the riot of color. In addition, grasses help hold up some of the spindly wildflowers.
- Mix species together. Large areas of one species require more maintenance and are more susceptible to pest problems. In prairie gardens, seeds fall, new seedlings emerge, and gardeners quickly learn that native plants don't stay put.

That said, if you don't mind the extra maintenance, you may want to play a bit with massing - planting an area with a single species. This creates bold splashes of bloom that are great for attracting butterflies

Digging Your Garden

Remove sod



1. Rent a sod cutter or use a spade to remove existing sod. Some people like to kill the sod first because it is easier to remove. It can be killed by covering it with black plastic for several weeks or by using an herbicide.

Dig the garden

1. Before you dig, make sure there are no underground utilities. BG&E will mark underground utilities for free. Call MISS UTILITY at 1-800-257-7777 or go to www.missutility.net.
2. Use a spade to dig the garden.
3. Have fun and play around with depth - it doesn't have to be uniform. To minimize erosion, keep slopes gentle.
4. You may want to use the soil you remove to create a berm on one side of the garden. Just be sure the area is graded so water runs into the garden.
5. If you discover lots of nice topsoil when you dig, you may want to salvage it. Keep it in a pile separate from the subsoil. After digging the garden, you can return this soil as the top layer.

If you want to amend the soil, till or spade weed-free compost into the top 4"-6" of the soil.

Planting and Mulching

1. Once your garden is dug, it's nice to give it a trial run. Put the sprinkler on in the garden for 30 to 60 minutes to see how well water infiltrates. Keep in mind that once plants are mature, infiltration will be much quicker. Be sure to let the garden dry out before planting.
2. It is best to plant a rain garden as soon after digging as possible. If you cannot plant it within a week or so, mulch it lightly with fibrous wood mulch.
3. It is important to mulch young rain gardens! If you don't mulch, the soil surface can seal up and prevent water from infiltrating. Mulching also prevents weeds and helps retain moisture so you won't have to water as often.
4. Not all mulches work in rain gardens. Lightweight mulch and flat wood chips will float when it rains. Good results have been obtained using coarse, fibrous shredded wood chips.

Maintaining

First season care

Caring for your garden the first several weeks after planting is critical to its success. The most important tasks the first year are watering and weeding. Young, establishing plants need about an inch of rainfall or water per week. By the second or third season the plants will be able to handle short periods of drought. The best way to keep weeds out is to keep a 3"-5" layer of mulch in place.

Long-term care

By the second or third season your plants should be fairly well established and most of the plants will be able to handle short periods of drought. During longer drought periods, you may need to water your garden. If you've planted native plants, your main task will be cutting back dead vegetation in the spring to clean up the garden for the new season.

Information courtesy of Maplewood

To learn more about rain gardens, or other ways that you can play a role in the Chesapeake Bay Restoration effort, check www.dnr.state.md.us/ed or call 410.260.8710.

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